**AMENDMENTS TO THE SPECIFICATION**

The specification is amended as follows.

The paragraph beginning on page 1, line 6 is replaced with the following amended paragraph.

This application is related to TRW Docket No. 22-0132, titled "Beam Hopping Self Addressed Packet Switched Communication System with Multi-port Memory", filed June 21, 2000 as serial No.09/599,035 (now abandoned), TRW Docket No. 22-0131, titled "Beam Hopping Self Addressed Packet Switched Communication System with Locally Intelligent Scheduling", filed June 21, 2000 as serial No. 09/599,041; TRW Docket No. 22-0133 ,titled "Beam Hopping Self Addressed Packet Switched Communication System with Multiple Beam Array Antenna", filed June 21, 2000 as serial No. 09/599,150; and TRW Docket No. 22-0006, titled "Gated Power Time Division Downlink for a Processing Satellite", filed March 16, 1999 as Serial No. 09/270,361; and TRW Docket No. 22-0127, title "Beam Hopped Gated Power Time Division Downlink", filed June 21, 2000 as Serial No. 09/599,042.

The paragraph beginning on page 12, line 5 is replaced with the following amended paragraph.

During operation, the bandwidth switch 200 accepts baseband data from the router 204 (e.g., an ATM cell router), and creates a waveform to be transmitted using the waveform processing chain. The waveform processing starts by directly converting baseband I and Q data to an intermediate frequency of, for example, 750 MHz. The waveform processing then selects one of Fl (e.g., 3.175 MHz) and F2 (e.g., 3.425 MHz) and one of F3 (e.g., 16 GHz) and F4 (e.g., 17.4 GHz) to produce a waveform to be transmitted with a final center frequency at one of 18.425 GHz, 18.675 GHz, 19.825 GHz, and 20.075 GHz. The scheduler ~~204~~ 202 monitors the

propagation of data through the waveform processing chain and determines the color of the waveform to be transmitted. To that end, the scheduler ~~204~~ 202 provides the color selection output 216 that indicates, as examples, the frequency, polarization, and hop location for the waveform to be transmitted.

The paragraph beginning on page 25, line 9 is replaced with the following amended paragraph.

The structure of the downlink schedule table is described in detail in TRW Docket No. 22-0131, Serial No. 09/599,150, and is incorporated herein be reference in its entirety.

The paragraph beginning on page 26, line 7 is replaced with the following amended paragraph.

Additional details of the frame format, coding, interleaving, and scrambling may be found in TRW Docket No. 22-0125, Serial No. 09/599,040 filed June 21, 2000, and is incorporated herein be reference in its entirety.

The paragraph beginning on page 32, line 19 is replaced with the following amended paragraph.

A data clock 1214 that preferably runs at 196.7 MHz drives the Inphase and Quadrature gates ~~1204~~1202, 1204. Note that a power gate input ~~316~~1216 connects to the Inphase and Quadrature gates 1202, 1204, as well as to the gating control input 1218 of the digital modulator core 1206. When an active power gating signal is present on the power gate input 1216, the Inphase and Quadrature gates 1202, 1204 have their outputs held in a known state (e.g., both 0). Furthermore, the digital modulator core 1206 outputs a signal with frequency content outside of the passband of the bandpass filter 1212.

The paragraph beginning on page 36, line 16 is replaced with the following amended paragraph.

Still with reference to Figure 13, the power gating signal 1310 results in power gating of the first and second payload and flush signals 1320, 1322, 1326, 1328. Similarly, the power gating signal 1312 results in power gating of the first payload signal ~~420~~ 1320 and the first flush signal 1322.

The paragraph beginning on page 38, line 8 is replaced with the following amended paragraph.

As another example, the scheduler 202 may determine when to activate power gating based on the current terrestrial cell hop location of the downlink beam. Thus, scheduler 202 may power gate the second payload signal 1326 if the bandwidth requirements of the current terrestrial cell are met by the first payload signal 1320 alone. As yet another example, the scheduler 202 may power gate based on data queues present in the router 204. For example, a data queue from which ATM data cells are extracted to fill the second payload signal ~~426~~ 1326 may consistently have too few cells to completely fill the second payload signal 1326. In response, the scheduler 202 may power gate the second payload signal 1326 periodically in order to maintain the data queue approximately at a preselected occupancy level, on average.

The paragraph beginning on page 43, line 11, is replaced with the following amended paragraph.

The first PN synchronization field 1516 and the second PN synchronization field provide synchronization bits for earth terminals. As will be explained in more detail below, a single PN synchronization sequence generator is used to provide an identical PN sequence for both PN synchronization fields 1516, ~~1528~~ 1526. The subframe count field 1524 counts individual

frames as they are transmitted. Preferably, the subframe count field 1524 includes a 16 bit downlink frame count appended with 8 zeros and convolutionally encoded with a relatively heavy (e.g., 3/8 rate) code. The masterframe count field 1522 increments at the start of every masterframe (e.g., every 9328 frames). The masterframe count rolls over after reaching its maximum value (OxFFFFFFFF), although it may be reset or preprogrammed at any time.

The paragraph beginning on page 45, line 6, is replaced with the following amended paragraph.

Although the light coding, heavy coding, and power gating options are with reference to a payload itself, the frame gate option indicates power gating of an entire frame (i.e., all .15600 symbols). Each coded value is preferably repeated four times in the frame type field. For example, a frame type of 00111100 00111100 00111100 00111100 in the first frame type field 1520 indicates that the first payload field ~~104~~ 1504 is lightly coded. As another example, a frame type of 11110000 11110000 11110000 11110000 in the second frame type field 1528 indicates that the second payload field 1510 will be power gated. When a frame or payload field is power gated, only a small fraction of the ordinary output power will be generated in the downlink beam during ~~for~~ the entire frame, or during the identified payload(s).